

What is claimed is:

1. A method of securely configuring a first machine in a pre-operating system environment, the method comprising:

detecting a message;

determining an operating mode of the machine;

providing an attestation;

performing a shared secret key exchange;

receiving a configuration update; and

updating a machine configuration in a pre-operating system

environment.

2. A method as defined in claim 1, wherein the message is sent from a second machine.

3. A method as defined in claim 1, wherein the operating mode of the first machine comprises at least one of an IT-managed machine and a consumer machine.

4. A method as defined in claim 1, wherein the attestation comprises at least one of machine identity information and a pseudo-anonymous authentication.

5. A method as defined in claim 4, wherein the pseudo-anonymous authentication is provided by a trusted platform module.

6. A method as defined in claim 4, wherein the machine identity information comprises at least one of a serial number, a network name, and a cryptographic representation of hardware registers.

7. A method as defined in claim 4, wherein the pseudo-anonymous authentication comprises an Attestation Identity Key.

8. A method as defined in claim 1, wherein updating the machine configuration in a pre-operating system environment is adapted to operate in an OS-transparent operating mode with networking support.

9. A method of securely configuring a client operating in a pre-operating system environment, the method comprising:

sending a message;
determining an operating mode of the client machine;
receiving an attestation;
verifying the attestation;
performing a shared secret key exchange; and
sending a configuration update to the client machine in a pre-operating system environment.

10. A method as defined in claim 9, wherein the message is to a client machine.

11. A method as defined in claim 9, wherein the operating mode of the client machine comprises at least one of an IT-managed device and a personal device.

12. A method as defined in claim 9, wherein the attestation comprises at least one of client machine identity information and a pseudo-anonymous authentication.

13. A method as defined in claim 12, wherein the client machine identity information comprises at least one of a serial number, a network name, and a cryptographic representation of hardware registers.

14. A method as defined in claim 12, wherein the pseudo-anonymous authentication comprises an Attestation Identity Key.

15. A method as defined in claim 9, wherein the attestation is verified by a trusted third party.

16. A method as defined in claim 9, wherein the configuration comprises at least one of a firmware setting, a BIOS setting, and a machine setting.

17. A method as defined in claim 16, wherein the configuration update comprises an encrypted configuration update.

18. A method as defined in claim 9, wherein sending the configuration update to the client machine in a pre-operating system environment is adapted to operate in an OS-transparent operating mode with networking support.

19. An apparatus to securely configure a client machine in a pre-operating system environment, the apparatus comprising:

a client machine comprising:

a messaging module configured to detect messages and send messages;

an operating mode;

a trusted platform module configured to provide an attestation;

a key exchange module configured to perform a shared secret key exchange; and

a configuration module configured to update the client's configuration in a pre-operating system environment; and

a server machine comprising:

an messaging module configured to send messages and receive messages;

a key exchange module configured to perform a shared secret key exchange after an attestation has been verified; and

an update module configured to generate a client configuration update.

20. An apparatus as defined in claim 19, wherein the client machine's operating mode comprises at least one of an IT-managed machine and a consumer machine.

21. An apparatus as defined in claim 19, wherein the trusted platform module is configured to use at least one of a pseudo-anonymous authentication and machine identity information.

22. An apparatus as defined in claim 19, wherein the configuration module is configured to update at least one of a firmware setting, a BIOS setting, and a machine setting.

23. An apparatus as defined in claim 19, wherein the configuration module is adapted to update the client's configuration in an OS-transparent operating mode with networking support.

24. An apparatus as defined in claim 19, wherein the update module is configured to generate at least one of a firmware update, a BIOS update, and a machine setting update.

25. An apparatus as defined in claim 19, wherein the server machine further comprises an encryption module configured to encrypt the client configuration update.

26. A machine readable medium having instructions stored thereon that, when executed, cause a machine to:

- detect a message;
- determine an operating mode of the machine;
- provide an attestation;
- perform a shared secret key exchange;
- receive a configuration update; and
- update a machine configuration in a pre-operating system environment.

27. A machine readable medium as defined in claim 26, having instructions stored thereon that, when executed, cause the machine to receive the message from a server.

28. A machine readable medium as defined in claim 26, having instructions stored thereon that, when executed, cause the machine to update at least one of a firmware setting, a BIOS setting, and a machine setting.

29. A machine readable medium having instructions stored thereon that, when executed, cause a first machine to:

- send a message;
- determine an operating mode of a second;
- receive an attestation;
- verify the attestation;
- perform a shared secret key exchange; and

send a configuration update to the client machine in a pre-operating system environment.

30. A machine readable medium as defined in claim 29, having instructions stored thereon that, when executed, cause the first machine to send the message via a network connection.

31. A machine readable medium as defined in claim 29, having instructions stored thereon that, when executed, cause the first machine to query a trusted third party to verify the attestation.

32. A machine readable medium as defined in claim 29, having instructions stored thereon that, when executed, cause the first machine to encrypt the configuration update.